



Syllabus



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COURSE SYLLABUS

MATH 506: Business Statistics - 4 Credits

Online

Fall, 2008

September 13 - December 12; (*Thanksgiving Break: November 22-28*)

Last Updated: July 29, 2008



Instructor: Instructor: Sue Forsythe

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Course Description

This course addresses introductory statistical and quantitative concepts, methods, and analyses important for making effective business decisions. Topics include descriptive and inferential statistics, including measurements of central tendency and dispersion, frequency distributions, sampling, graphing techniques, hypothesis testing, normal distributions, regression and correlation, chi square testing, t-tests, analysis of variance, and linear regression. The course provides students with a foundation in theoretical principles of statistics and then emphasizes the practical skills required to interpret and present data that support management decisions.

Prerequisites

MATH 502: Introduction to College Math or a minimum acceptable score on the Accuplacer Algebra test; and CMPL 511: Software Tools or skills with EXCEL.

Learning Outcomes

Online courses, even more than face-to-face courses, require you to take the lead role in actively learning the material in the course to achieve the learning outcomes. As the instructor, my job is to guide you through the class, providing help and direction when you need it. The more self-directed, engaged, and participatory you are, the more you will take away from this class.

At the completion of the course, learners will be able to:

- Recognize and differentiate between descriptive and inferential statistics.
- Describe sampling techniques, data collection methods and their application to business decisions.
- Construct, present, and interpret frequency distributions, histograms, charts and diagrams.
- Describe measures of central tendencies, variance, and their relationship to percentiles.
- Describe discrete probability distributions, their summary measures, common rules of probability and apply them to solving and interpreting probability problems related to business.
- Discuss sampling errors, distribution, and calculating from finite populations. Form and interpret confidence interval estimates for single populations.
- Using data sets, calculate and interpret tests such as chi-square, correlation coefficients, linear

- regressions, t-tests, F tests, and ANOVA.
- Describe theory of control charts using X-bar and R-charts.
- Utilize statistical principles and tools in managerial decision-making.
- Describe the ethical principles relevant to the use of statistics in managerial decision making

Course Resources

Textbook(s):

Applied Statistics in Business and Economics. 2nd edition by Doane and Seward. Published by McGraw Hill 2007. (ISBN - 0073215759) Bundled with ALEKS, 1 semester access code.

- Resources on the CD-Rom include PowerPoint slides for each chapter, Chapter quizzes, Visual Statistics, LearningStats, Excel data sets, an Excel add-in package called MegaStat, ScreenCam tutorials, Chapter 18, and web links.
- The textbook's website www.mhhe.com/doane1e has self-grading quizzes, data files, PowerPoint slides, and other chapter specific resources.
- There is a student solutions manual available.

Other Class Materials:

- **Access to a computer with MS Excel** with ALEKS, MegaStats, LearningStats, VisualStats, and the data files from the books' CD installed. You will be using the computer extensively outside class.
- **A calculator with statistical functions** for times you aren't near a computer.

Textbooks are available via GSC's online bookstore, MBS Direct at:

<http://bookstore.mbsdirect.net/gsc.htm> (The course-CRN number for ordering this textbook is: 10153). Textbooks can also be purchased from MBS via phone, mail or fax. For additional information, visit the [Online Bookstore](#) section of the college web site.

PLEASE NOTE: It is the learner's responsibility to have purchased all required course materials before the start of the course. Learners are expected to meet all course expectations even if the shipment of a required textbook or other learning resource is delayed. Be sure to choose the shipping option that will get your text/resource delivered in a timely manner.

Blackboard Orientations

There are no face-to-face sessions for this course. If you have never taken an Online Interactive Course (OIC) at the college, we highly recommend that you attend one of the [2-hour Blackboard Orientation sessions](#) available throughout the state. If you choose not to attend a face-to-face session, you are encouraged to complete the [Online Orientation with audio](#) at your own convenience.

Course Policies

It is the learner's responsibility to have purchased all required course materials before the start of the course. Learners are expected to meet all course expectations even if the shipment of a required textbook or other learning resource is delayed. Be sure to choose the shipping option that will get your text/resource delivered in a timely manner.

Getting Help

First stop: Read all the documents available in the course: syllabus, getting started pages, ALEKS introductions, etc. Most general questions will be answered there. During every module, be SURE to read the Notes page, and you'll benefit from all the tips I have compiled over the previous semesters.

Second stop: Ask your classmates or instructor via the Homework Help forums. Don't be bashful-ASK! Odds are other students have the same question as you have. Be as specific as you can in asking questions; ask about a particular textbook problem or a specific ALEKS problem. Cutting and pasting into a Word doc, then attaching to your post, works best for ALEKS problems. The more specific you are, the easier it is for me to help.

Third stop: If we can't resolve the question on the discussion board, we can schedule a chat or virtual classroom session. Other students will benefit from this as well, so again, don't hesitate to ask!

Fourth stop: You can always request tutoring at no extra cost from Granite State. See the Academic Resources link under Resources on the Course Menu.)

For assistance with technical issues related to Blackboard contact the GSC Technical Assistance Center by submitting an online help request (<http://bbresources.granite.edu/techassist/index.html>) or call 1-888-372-4270 (toll free) between the hours of 8:30 am - 5:00 pm Monday through Friday

Description of Course Activities and Requirements

Student learning will be assessed through participation, homework, ALEKS, weekly quizzes, and a final exam. Rubrics (sets of standards for appraising your participation and knowledge of the subject matter) will be found within the Introduction Folder in the Course Contents section of the course.

If you have an emergency or unavoidable business trip, etc, and need to turn in late work, you need to contact me BEFORE the work is late so we can agree on a make-up plan.

Participation in Discussion Boards: Your active participation in the discussion board forums contributes not only to your own success, but to the success of the class. To that end, you will receive a class participation grade each week for a total of 15% of your grade. For each new thread, post an original reply and respond to posts of at least two other students. Contact me immediately if you must be away from the course for more than three days at a time. Please see the Participation Rubric within Course Contents for expectations regarding your participation in the course.

For each question, your grade will be based upon both the quantity and quality of your posts, as required for each question. For a question that requires an original response and 2 responses to other students, the grade will be given as follows:

0% - No participation

50% - One quality response to another student

60% - Two quality responses to other students

90%: A quality original response

95%: A quality original response plus one quality response to other students

100%: A quality original response plus 2 quality responses to other students

"Quality" is a subjective measure based on relevance, grammar/spelling, clear expression of idea, and contribution to the learning community. Posts that say something like "I agree!" or "good point!" will not count towards this requirement. Once the module is over, there will be no credit given for late posts.

Homework Problems: You are the learner; it is your education. It is in your best interest to be prepared and complete the homework to the best of your ability. Statistics is best learned by doing! To that end, only selected homework problems will be submitted and graded. The other problems are

for you to practice the concepts, and have answers in the back of the book. You may be asked to post your solution to selected homework problems to share with the class.

Problems sets are worth 20% of your grade. Because the solution sets are automatically released online, to earn credit for a late homework assignment you must show enough calculation and reasoning to convince me you've done more than look at the solutions. Late problem sets may earn a maximum of 80%.

ALEKS: Consider ALEKS your personal statistics tutor. It is an online instructional program to assess your skills and lead you at your own pace toward new skills. Though it has no sympathy for careless errors, you can yell at it and its feelings won't be hurt. It will lead you in small "bites" toward mastery. You need to complete ALEKS for the week BEFORE you do the problem set or take the quiz; it will help you complete those successfully! ALEKS will ask you to review the previous day's work each day you log on, and will periodically give you assessments to ensure the material is sticking.

You will have goals to achieve in ALEKS each week. **DO NOT GET BEHIND!** You will spend a significant amount of time loving/hating ALEKS :) If you get behind, you will not be happy for the rest of the course. Students typically take between 30 and 70 hours to finish the entire ALEKS requirement, depending on how quickly they master the concepts.

If you get stuck on a concept, cut and paste a problem into a Word document and attach it to a post on the discussion board. Don't waste hours banging your head against the wall! I am here to help you. Don't forget the Notes pages contain lots of tips each week, since there are often much easier ways to solve problems using Excel.

I highly recommend having a notebook or binder to use for ALEKS notes and worked problems. Every time you click on "explain" in ALEKS, you should print out the resulting screen and add it to your notebook, along with any notes. If you do this consistently, you will have the information ready the next time ALEKS gives you that kind of problem. You will also end up with your own personalized textbook.

You will receive a weekly ALEKS grade, worth a total of 25% of your grade. Each week, starting from 100, subtract 5 points for each of the current week's bites not completed; then subtract an additional point for each of the previous week's bites not completed. During the last module, there will be a course completion assessment; after you take it, you can earn back any lost bites. Your final grade will be your "percentage complete." There are no make-ups for late ALEKS work, but you will need to get caught up for the next module.

Quizzes: There will be weekly open-book quizzes, usually about 10-12 questions. They are to be completed AFTER you finish that week's readings, ALEKS, and homework. The quizzes not only give you a grade, but are intended to help you evaluate your own progress and comprehension of the course so far. The quizzes will comprise 20% of your grade. There are no make-ups on late quizzes. Your lowest quiz grade will be dropped at the end of the semester.

Midterm and Final Exam: There will be a midterm and a final exam, which together are worth 15% of your grade. They will be completed on-line, and are both open book.

Grading Percentages

Your final grade for the course will be calculated as follows:

Activity	% of Final Grade
Participation	15%
Homework	20%
ALEKS	25%

Quizzes	20%
Midterm and Final	20%
Total	100%

Grades in this class will follow the scale of Granite State College, where A/4.0 is awarded for Excellent work and F/0.0 is awarded for Failure/ No credit.

Granite State College Standard Grading Scale

Grade	Percent	Grade Points	Level of Achievement
A	95-100	4.0	Excellent
A ⁻	90-94	3.67	
B ⁺	87-89	3.33	Good
B	84-86	3.0	
B ⁻	80-83	2.67	
C ⁺	77-79	2.33	
C	74-76	2.0	*Acceptable
C ⁻	70-73	1.67	†
D ⁺	67-69	1.33	Poor
D	64-66	1.00	
D ⁻	60-63	0.67	
F	≤59	0	Failure, no credit

*A grade of C or better is required to fulfill requirements in the major, minor, or general education core at GSC. Please consult the GSC catalog for details.

† A grade of C⁻ or below generally does not transfer to other academic institutions.

Course Schedule & Topics

A Typical Week

Each week repeats the same structure, except for the Midterm and Finals weeks. Here's what you should expect:

Mon: New module starts. Read the new chapter for the week, print out the Notes pages, start working on ALEKS, etc.

Wed: Post original responses to discussion board questions.

Sat: Post any remaining follow-ups to discussion board questions. ALEKS due at 11:55 PM.

Sun: Problem Set due at 6:00 PM (solution set releases), Quiz due at 11:55 PM.

I highly recommend finishing ALEKS before doing the problem set and the quiz. You don't have to wait until the Saturday and Sunday deadlines to submit work. If you submit your problem set early and wish to get the solution set, please email me.

Module	Reading	ALEKS Goal
Module 1: Overview & Data Collection September 13 - 21	Chapters 1 and 2	Readiness Chapter 2
Module 2: Describing Data Visually September 22 - 28	Chapter 3	Chapter 3
Module 3: Descriptive Statistics September 29 – October 5	4.1 - 4.6	Chapter 4
Module 4: Probability October 6 - 12	5.1 - 5.5	Chapter 5
Module 5: Discrete Distributions October 13 - 19	6.1 - 6.5	Chapter 6
Module 6: Continuous Distributions October 20 - 26	7.1 - 7.5	Chapter 7
Module 7: Midterm Week October 27 – Nov. 2	Review	Catch-up, if necessary
Module 8: Sampling Distributions & Estimation November 3 – 9	8.1 - 8.8	Chapter 8
Module 9: One-Sample Hypothesis Tests November 10 – 16	9.1 - 9.4	Chapter 9
Module 10: Two-Sample Hypothesis Tests November 16 - 21 November 22 - 28: Thanksgiving Break	10.1 - 3, 10.5 (F test)	Chapter 10
Module 11: Analysis of Variance November 29 – December 7	11.1 - 11.3, 11.5	Chapter 11
Module 12: More Topics December 8 - 12	Assigned topics in remaining chapters	Completion Assessment Final Exam due December 12

Note: The schedule above may change at the instructor's discretion.

Library Resources

Granite State College has a Virtual Library (<http://www.granite.edu/current-students/virtual-library/>) available 24/7 with access to the full-text of thousands of journals and professional periodicals, an online Reference Room, selected Internet resources, writer's resources, research and citation help, and a collection of tutorials. The databases are password protected.

See GSC Library tab in MyGranite for username and password. In addition, the **Library Info** link in the course menu provides direct links to research databases, *Research FAQs* and more.

Academic Resources and Information Services

Academic assistance to students is available at GSC Centers at no additional charge in such areas as basic skills preparation in reading, writing and math; study skills and research and citation help. Academic Resources staff members work closely with faculty and students toward academic success. A whole range of tools is available, including study and time management tips, APA and MLA citation assistance, access to learning resources online, and feedback on course writing projects. To contact an Academic Resource and Information Coordinator, see the Academic Resource Link on the Resources page in the course menu or go directly to http://bbresources.granite.edu/course_docs/acad_resources.htm.

Technical Assistance

For assistance with issues related to accessing the MyGranite portal, GSC email, Webrock, online courses or other technical issues related to any of the Blackboard tools, please visit the GSC Technical Assistance Center (<http://bbresources.granite.edu/techassist/help.htm>) for answers to the most frequently asked questions or to submit an online help request form. Or call **1-888-372-4270** (Hours: M-F, 8:30-5:00, messages checked twice daily on weekends. Extended hours for the week before start of the term and first week of the term: M-Th, 8:00-7:00.)

Documented Disabilities / Americans with Disabilities Act

Granite State College will provide qualified individuals with disabilities the same educational opportunities available to persons without disabilities. When an individual's documented disability creates a barrier to educational opportunities, the College will attempt reasonable accommodation to remove the barrier. If you need assistance, we recommend that you make contact early to ensure that your requests can be reviewed prior to the start of each term. If you wish to apply for accommodations, contact your academic advisor or the Dean of Learner Services in Concord. See the complete Granite State College policy in the current college catalog for further details.

Academic Honesty

An academic community is based on honesty and integrity. Plagiarism, cheating, or other forms of academic dishonesty are not acceptable at Granite State College. Faculty and students have a joint responsibility to ensure the integrity of learning.

All work that you submit must be your own except in those instances when your instructor gives specific permission to collaborate. When quoting, summarizing or explaining ideas that are based on another's work, whether in print or online, make sure to cite references appropriately. Plagiarism is using another's words or even paraphrasing another's work without giving proper credit through the use of citations.

For Granite State College's complete [academic honesty policy](#), see the current college catalog.

Conduct in the Online Classroom

Membership in society implies minimal norms for civil behavior towards one another. It is Granite State College's expectation that all members of our college community treat faculty, staff, and fellow

learners with respect. Learners need to be knowledgeable of and comply with college policies. Each individual is accountable for his/her actions and for the consequences of any behavior that is inconsistent with these values and expectations.

Institutional Assessment

Assessment is an ongoing process that enables the College to improve its programs, courses, and teaching methods. Institutional evaluation may be embedded in tests, exams, and other measurements of student learning. As members of a learning community, students, faculty, and staff will be expected to participate in the important process of assessment on occasion. Confidentiality of any data that identify participants is maintained.

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